IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
REQUEST FOR FILING APPLICATION UNDER RULE 53(b)

Pursuant to 37 CFR 1.53(b), please file a ☒ continuation/☐ divisional of the pending prior PATENT APPLICATION of:
Inventor: GREEN et al.
Serial No. 09/001,484
Filed: 31 December 1997
For: **SATELLITE BROADCAST RECEIVING AND DISTRIBUTION SYSTEM**

Atty Dkt.: 850-15
C# M#
Date: July 21, 2000
Group: 2745
Examiner: Vo, N.

Assistant Commissioner for Patents
Washington, DC 20231
Sir:

This request for filing under Rule 53(b) is made by the following named inventor(s) (using the above-identified title):
Inventor(s): GREEN et al.

☒ Attached is a true copy of the prior application as originally filed including the specification, claims, Oath/Declaration and drawings (if any) and abstract (if any). No amendments (if any) referenced in the Oath or Declaration filed to complete the prior application introduced new matter.

☐ Priority is hereby claimed under 35 USC 119 based on the following foreign applications, the entire content of which is hereby incorporated by reference in this application:

Application Number	**Country**	**Day/Month/Year/Filed**

☐ certified copy(ies) of foreign application(s) attached or
☐ already filed on _____ in prior appln. no. _____ filed _____
☐ already filed in _____ filed _____

☐ Please amend the specification by inserting before the first line: -- This application claims the benefit of U.S. Provisional Application No. , filed , the entire content of which is hereby incorporated by reference in this application.--

☐ The prior application is assigned to .

☒ Power of Attorney has been granted to Robert W. Faris et al, Reg. No. 31,352 of Nixon & Vanderhye P.C., 1100 N. Glebe Rd., 8th Flr, Arlington, VA 22201.

☒ Address all future communications to: Nixon & Vanderhye P.C., 1100 N. Glebe Rd., 8th Floor, Arlington, VA 22201.

☐ Please amend the specification by inserting before the first line --This is a of application Serial No. , filed , now pending, the entire content of which is hereby incorporated by reference in this application.--

☐ "Small entity" statement of record. ☐ "Small entity" statement attached.

☐ Petition filed in prior application to extend its life to insure copendency.

☒ The Examiner's attention is directed to the prior art cited in the parent application by applicant and/or Examiner for the reasons stated therein.

☒ Please enter the attached and/or below preliminary amendment **prior** to calculation of filing fee:
Cancel claims 2-21

☒ The entire disclosure of the prior application above-referenced is considered as being part of the disclosure of this new application and is hereby incorporated by reference therein.

FILING FEE IS BASED ON CLAIMS AS FILED LESS ANY HEREWITH CANCELED

Basic Filing Fee					$	690.00
Total effective claims	11	- 20 (at least 20) =	0	x $ 18.00	$	0.00
Independent claims	3	- 3 (at least 3) =	0	x $ 78.00	$	0.00
If any proper multiple dependent claims now added for first time, add $260.00 (ignore improper)					$	0.00
				SUBTOTAL	$	690.00
If "small entity," then enter half (1/2) of subtotal and subtract					-$(	0.00)
				SECOND SUBTOTAL	$	690.00
Assignment Recording Fee ($40.00)					$	0.00
				TOTAL FEE ENCLOSED	$	690.00

Any future submission requiring an extension of time is hereby stated to include a petition for such time extension. The Commissioner is hereby authorized to charge any deficiency in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our **Account No. 14-1140.** A duplicate copy of this sheet is attached.

1100 North Glebe Road, 8th Floor
Arlington, Virginia 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100
RWF:ejs

NIXON & VANDERHYE P.C.
By Atty: Robert W. Faris, Reg. No. 31,352

Signature: _____

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

GREEN et al. Atty. Ref.: 850-15

Serial No. Unassigned Group: Unknown

Filed: Herewith Examiner: Unknown

For: SATELLITE BROADCAST RECEIVING AND DISTRIBUTION SYSTEM

* * * * * * * * * * *

July 21, 2000

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

PRELIMINARY AMENDMENT

Sir:

In order to place the above-identified continuing application in better condition for examination, please amend the application as follows to correct grammatical and typographical errors:

IN THE DRAWINGS:

Amend Figure 1 of the drawings as indicated in red ink on the attached copy thereof.

IN THE ABSTRACT:

Please amend the abstract as follows:

Line 2, delete "the transmission of";

Line 4, change "simultaneously, also the" to -- simultaneously over the same cable. The --;

Line 8, change "receive" to -- receives --; same line 8, delete "then";

Line 15, after "a" insert -- TV or other --;

Line 16, change "the" to -- a --; same line 16, delete "for" (second occurrence);

Line 17, change "broadcasting to occur" to -- broadcast reception --;

Line 18, change "to" to -- of --;

Line 20, change "in" to -- to --; same line 20, change "high-rises" to -- high-rise buildings --.

IN THE SPECIFICATION:

Please amend the specification as follows:

Page 1, after the title and before "BACKGROUND OF THE INVENTION" insert the following:

-- This is a continuation of application Serial No. 09/001,484, now U.S. Patent No. _____ ; which is a continuation-in-part of application Serial No. 08/838,677, now U.S. Patent No. 5,805,975; which is a continuation-in-part of application Serial No. 394,234, filed February 22, 1995, now abandoned. --

line 6, after "system" insert a comma;

line 9, before "or" insert -- (-- and after "circular", second occurrence, insert --) --;

line 10, delete “to be transmitted”;

line 17, delete "particular device" and insert – satellite receiving arrangement --;

line 18, before "received" insert -- being --; same line 18, after “antennas” insert a comma;

line 20, delete "device " and insert -- satellite receiving arrangement --; same line 20, after “is” insert – generally --;

line 22, after "like" insert -- . The outdoor and indoor" and delete "and both"; and

delete lines 24-26.

Page 2, lines 1-5, delete in their entirety;

line 6, change "issue" to -- issued --;

line 7, change “disclose” to --discloses--;

line 10, after "connected" insert -- to --;

line 11, delete "have" and insert -- has --;

line 13, change "antenna" to -- antennas --;

line 16, delete change "short coming” -- shortcoming. --;

lines 16-18, delete "by not providing a…to the antennas."

line 19, after "silent" add – as -- ; same line 19, change "the means" to – any means --;

line 22, change “, issue” to -- issued --;

line 23, delete "disclose" and insert -- discloses --; and

line 27, delete "side" and insert -- site --.

Page 4, line 4, before "or" insert -- (--;

line 5, after "circular" insert --) --;

line 13, delete "for";

line 20, delete "and polarities";

line 24, after "simultaneously" insert a comma; and

line 26, delete "sources" and insert -- television receivers --.

Page 5, line 2, delete "and polarities"; --;

line 15, delete "satellite" and insert -- cable --;

line 16, delete "final" and insert -- further --;

line 19, change "proceeding objects" to -- preceding objects, --; and

delete lines 24-27.

Page 6, delete lines 1-2;

line 3, delete "simultaneously.";

between lines 7 and 8 insert the following:

-- An example embodiment of the present invention provides a satellite broadcasting system comprising a satellite dish coupled to a low-noise block converter. The low-noise block converter is coupled to a first means of converting vertical polarization signals and horizontal polarization signals (or left-hand circular polarization signals and right-hand circular polarization signals) from a satellite, and transmitting both polarity signals simultaneously via a single coaxial cable. This enables two different frequencies and polarities to be transmitted simultaneously via a single coaxial cable.

The example embodiment further includes a second means coupled to the first means. The second means converts the vertical polarization signals and the horizontal polarization signals (or said left-hand circular polarization signals and the right-hand circular polarization signals) from the first means to frequencies for a source. A satellite receiver is coupled to the second means. The source is coupled to the satellite receiver.

The example embodiment further includes a power source coupled to the first means. The power source powers the first means.

In accordance with a further aspect of the invention, the second means provides for the signals to be converted separately and independently to the satellite receiver by a transmitting means. The present invention in one of its aspects further provides a transmitting means for the signals to be selectively converted to the satellite receiver via a first cable coupled to the second means.

In accordance with a further aspect of the invention, the transmitting means further includes a polarity switch for permitting the signals to be selectively converted to the satellite receiver.

In accordance with a still further aspect of the invention, the first means includes a first converting system for converting the signals of a first direction to a desired first frequency and polarization, and a second converting system for converting the signals of a second direction to a desired second frequency and polarization. The first converting system may include a first down converter which is coupled to an amplifier. The second converting system may include an up converter coupled to a second down converter. A joining means may be coupled to the amplifier and the second down converter. The

joining means may include a four way splitter. A phase lock loop transmitter may be coupled to the four way splitter.

In accordance with a further aspect of the invention, the second means includes a splitting means to split and divide the signals from the single coaxial cable to enable the signals to be transmitted to a first converting system and a second converting system. The first converting system may convert the signals of a first direction to a desired first frequency and polarization for the satellite receiver. The second converting system may convert the signals of a second direction to a desired second frequency and polarization for the satellite receiver. The first converting system may include a first up converter which is coupled to a splitting means and a first down converter which is coupled to a first down converter. The first down converter may be coupled to the satellite receiver via a first line. The second converting system may include a second up converter coupled to the splitting means. The second up converter may be coupled to the satellite receiver via a second line. The splitting means may include a four way splitter. A phase lock loop receiver may be coupled to the four way splitter.

In accordance with a further aspect of the invention, a first converting system includes a first up converter which is coupled to a splitting means and to a first down converter. The first down converter may be coupled to a joining means. The second converting system may include a second up converter coupled to the splitting means and to the joining means. A polarity switch may be coupled to the first down converter and the second up converter. The polarity switch may be coupled to a first cable which is coupled to the satellite receiver.

In accordance with a further aspect of the invention, the splitting means and the joining means each include a four way splitter, and a phase lock loop receiver is coupled to the spitting means. The splitting means may split and divide signals from the single coaxial cable to enable said signal to be transmitted to a third converting system for converting the signals of said first direction and a fourth converting system for converting the signals of the second direction.

The third converting system includes a second up converter which is coupled to the splitting means and to a third down converter. The third down converter may be coupled to the satellite receiver via a first conduit. The fourth converting system may include a third up converter coupled to the splitting means. The third up converter is also coupled to the satellite receiver via a second conduit. --; and

Page 6, line 17, after "embodiments" insert a comma.

Page 7, line 1, delete "DRAWINGS" and insert -- DRAWING --; and

delete lines 5-6.

Page 8, line 2, change "fig." to -- FIGURE --;

line 3, after "satellite" insert -- antenna 1 --;

line 5, after "processor" insert -- 44 --;

line 7, after "signals" insert a semi color -- ; --

line 10, after "processor" and before the comma "," insert -- insert -- 45 or 46 --;

line 12, delete "source" and insert -- television --;

lines 12-13, delete "(this figure illustrates a television as its source)." and insert -- or other "source." --;

line 14, after "satellite" insert -- antenna --;

line 15, after "amplifying" insert -- and converting --;

line 17, after "signals" insert a semi color -- ; --;

line 18, after "LNB" insert -- converter 2 --;

line 23, delete "conduits" and insert -- lines --; and

line 27, delete "conduits" and insert -- lines --.

Page 9, line 3, change "respectfully" to -- respectively --;

line 6, change "permit" to --permits--;

line 14, after "so" insert -- as --;

line 25, delete "amplifier" and insert -- amplified --;

line 25, after "of" insert -- amplifier -- ; and

line 25, after "and" insert -- the --.

Page 10, line 1, after "From" insert -- splitter --;

line 2, change "11 which" to -- 11. Block 12 --;

line 5, after "dish" insert -- 1 --;

line 14, change "16 energize" to -- 12 energizes --;

line 17, change "decibels" to -- power level (decibels) --;

line 19, change "includes" to --45 can take the form of --;

line 21, after "processor" insert -- 45 --; same line 21, after "source" insert -- (TV 29) --;

line 22, after "receiver" insert -- 27 --;

line 24, change "figure" to -- FIGURE --;

line 26, after "processor" insert -- 45--;

line 27, after "processor" insert -- 45 --; change "conduit 19" to -- line 19 -- ; and change "conduit" (second occurrence) to.—conduit 19 --.

Page 11, line 1, change "lock" to -- locked --;

line 8, change "conduit" to -- line --;

line 17, change "conduit" to -- line --;

line 18, change "source" to -- TV (source) --;

line 22, change "its" to -- their --;

lines 24 and 25, change "source" to -- TV (source) --;

line 26, after "29" insert -- and satellite receiver 27 --.

Page 12, line 1, change "source" to -- TV (source) 29 and satellite receiver 27 --;

line 3, after "satellite" insert -- receiver 27 --;

line 4, after "receiver" insert -- 27 --;

line 6, change "figure" to -- FIGURE --;

line 8, after "receiver" insert -- 41--;

line 9, after "signals" delete the comma;

line 10, after "circular" (first occurrence), insert -- polarized signals --;

line 15, change "lock" to -- locked --;

line 18, after "36" insert a comma;

line 23, after signals" delete the comma.

Page 13, line 3, change "source" to -- TV (source) --;

line 4, change "figure" to -- FIGURE --;

line 6, change "is" to -- need be --;

line 8, change "to" to -- on --;

line 9, change "source" to -- TV (source) --;

line 11, after "and" insert -- derived from different --.

line 13, change "this will" to -- this satellite system will --.

IN THE CLAIMS:

Please delete claims 1-21 without prejudice or disclaimer and add the following new claims:

-- 22. A method of distributing satellite signals received by a satellite antenna via a coaxial cable to a satellite receiver coupled to an end of said coaxial cable, said coaxial cable also having a further end, said method comprising:

receiving, with a satellite antenna, first signals having a first polarization and second signals having a second polarization;

frequency converting at least said first received signals to a different frequency band;

simultaneously applying said frequency-converted first signals and said second signals to the coaxial cable;

simultaneously communicating said frequency-converted first signals and said second signals through the cable;

recovering the frequency-converted first signals and the second signals from the cable;

further frequency converting said recovered first signals to a frequency range the satellite receiver can receive; and

switching, under control of said satellite receiver, between said further frequency-converted first signals and said second signals for application to said satellite receiver.

23. The method of claim 22 wherein said switching step comprising operating an electrical switch.

24. A method of distributing broadcast signals received from an artificial satellite comprising:

receiving first polarized signals and second polarized signals from the artificial satellite;

frequency converting at least one of said first signals and said second signals to different frequencies;

after processing by the frequency converting step, applying said first and second signals, to a coaxial cable such that the same coaxial cable carries both said first signals and said second signals simultaneously;

recovering said first signals and said second signals from the coaxial cable; and

selecting between said first signals and said second signals for application to a satellite receiver.

25. The method as in claim 24 wherein said selecting step comprises electrically switching between said first signals and said second signals for application to said satellite receiver.

26. The method of claim 24 wherein said satellite receiver alternately uses first polarity type signals or second polarity type signals at a time, and said selecting step selects only first polarity type signals or second polarity type signals at a time for application to said satellite receiver.

27. The method of claim 24 wherein said satellite receiver is coupled via a wire to an input source, and said selecting step selects between said first signals and said second signals for application to said wire.

28. The method of claim 24 wherein said frequency converting step comprises a down conversion.

29. The method of claim 24 wherein the frequency converting step comprises an up conversion.

30. The method of claim 24 wherein the frequency converting step comprises a down conversion followed by an up conversion.

31. The method of claim 24 further including providing further frequency converting said at least one of said first signals and second signals for application to said satellite receiver.

32. A satellite broadcasting system comprising:

a satellite dish;

a low-noise block converter coupled to the satellite dish;

a head-in processor that receives, from the low-noise block converter, both vertical polarization type satellite signals and horizontal polarization type satellite signals and applies both said vertical polarization type satellite signals and said horizontal polarization type satellite signals simultaneously to the same distribution cable; and

a head-out processor adapted for, in use, being coupled to a satellite receiver of the type that alternately receives vertical polarization type satellite signals and horizontal polarization type satellite signals, said head-out processor being coupled to said distribution cable, said head-out processor selecting between said vertical polarization type satellite signals and said horizontal polarization type satellite signals being carried by said distribution cable for application to said satellite receiver. --

REMARKS

This application is a continuation of allowed application Serial No. 09/001,484; which is a continuation-in-part of application Serial No. 08/838,677 (now U.S. Patent No. 5,805,975); which is itself a continuation-in-part of application Serial No. 394,234 filed 2/22/1995, now abandoned.

The specification of this continuation application is identical to that of great-grandparent application Serial No. 394,234, filed 2/22/1995. Applicants are concurrently filing a further continuing application including a specification that is identical to their grandparent application Serial No. 08/838,677.

Substitute Specification

This preliminary amendment amends the specification to improve readability and correct numerous typographical and grammatical errors. For the Examiner's convenience, a substitute specification is also attached along with a marked-up copy of the substitute specification showing the matter being added to and deleted from the original specification. Applicants believe that this preliminary amendment contains no new matter, and that the substitute specification thus includes no new matter.

The majority of the proposed specification amendments simply correct typographical and grammatical errors. An exception to this is the extensive insert on page 6, after line 7 to the "Summary of the Invention." This material being added to page 3 is a narrative, paraphrased version of claims 1-21 – which the law regards as part of the "written description" of the originally filed patent application.

While applicants have been careful in making these amendments not to inject any new concepts or other "new matter," applicants request the Examiner to carefully review the amendment and raise any "new matter" concerns he may have.

Revised Drawing

Applicants are also proposing to amend the drawing to include legends set forth in the specification. A new formal drawing including these legends is attached.

New Claims

Applicants have also canceled original claims 1-21 without prejudice or disclaimer, and have added new claims 22-32. These new claims are fully supported by

the original 2/22/95 specification. The following example comparison charts show example support in the originally filed specification for each elements recited in the new claims:

New Claim Language	Example Support in 2/22/95 Specification
22. A method of distributing satellite signals received by a satellite antenna via a coaxial cable to a satellite receiver coupled to an end of said coaxial cable, said coaxial cable also having a further end, said method comprising:	Figure 1, items 1, 13 and 27 and associated descriptions at e.g., page 8, lines 7-13.
receiving, with a satellite antenna, first signals having a first polarization and second signals having a second polarization;	Page 8, lines 4-8.
frequency converting at least said first received signals to a different frequency band;	Figure 1, items 2, 5, 7 and/or 8; page 8, lines 14-page 9, line 22
simultaneously applying said frequency-converted first signals and said second signals to the coaxial cable;	Page 9, lines 23-27; page 13, lines 10-12.
simultaneously communicating said frequency-converted first signals and said second signals through the cable;	Page 10, lines 3-5.
recovering the frequency-converted first signals and the second signals from the cable;	Page 10, lines 15-18, 25-27; Figure 1, items 20, 33; page 12, lines 11-16.
further frequency converting said recovered first signals to a frequency range the satellite receiver can receive; and	Figure 1, items 22-24, 35-37; page 11, lines 1-page 12, line 1; page 12, lines 17-19.
switching, under control of said satellite receiver, between said further frequency-converted first signals and said second signals for application to said satellite receiver.	Figure 1, item 39; page 12, line 25-page 13, line 3; original claim 6 (page 15, lines 12-15).
23. The method of claim 22 wherein said switching step comprising operating an electrical switch.	Figure 1, line between items 41, 39; page 12, line 25-page 13, line 3.

New Claim Language	Example Support in 2/22/95 Specification
24. A method of distributing broadcast signals received from an artificial satellite comprising:	Page 1, lines 13-16.
receiving first polarized signals and second polarized signals from the artificial satellite;	Page 8, lines 4-8.
frequency converting at least one of said first signals and said second signals to different frequencies;	Figure 1, items 2, 5, 7 and/or 8; page 8, lines 14-page 9, line 22
after processing by the frequency converting step, applying said first and second signals, to a coaxial cable such that the same coaxial cable carries both said first signals and said second signals simultaneously;	Page 9, lines 23-27; page 13, lines 10-12; page 10, lines 3-5.
recovering said first signals and said second signals from the coaxial cable; and	Page 10, lines 15-18, 25-27; Figure 1, items 20, 33; page 12, lines 11-16.
selecting between said first signals and said second signals for application to a satellite receiver.	Figure 1, item 39; page 12, line 25-page 13, line 3; original claim 6 (page 15, lines 12-15).
25. The method as in claim 24 wherein said selecting step comprises electrically switching between said first signals and said second signals for application to said satellite receiver.	Figure 1, item 39; page 12, line 25-page 13, line 3; original claim 6 (page 15, lines 12-15); Figure 1, line between items 41, 39; page 12, line 25-page 13, line 3.
26. The method of claim 24 wherein said satellite receiver alternately uses first polarity type signals or second polarity type signals at a time, and said selecting step selects only first polarity type signals or second polarity type signals at a time for application to said satellite receiver.	Figure 1, item 39; page 12, line 25-page 13, line 3; original claim 6 (page 15, lines 12-15); Figure 1, line between items 41, 39; page 12, line 25-page 13, line 3.
27. The method of claim 24 wherein said satellite receiver is coupled via a wire to an input source, and said selecting step selects between said first signals and said second signals for application to said wire.	Figure 1, item 40; Figure 1, item 39; page 12, line 25-page 13, line 3; original claim 6 (page 15, lines 12-15).
28. The method of claim 24 wherein said frequency converting step comprises a down conversion.	Figure 1, item 5; page 9, lines 9-10.

New Claim Language	Example Support in 2/22/95 Specification
29. The method of claim 24 wherein the frequency converting step comprises an up conversion.	Figure 1, item 7; page 9, lines 17-18.
30. The method of claim 24 wherein the frequency converting step comprises a down conversion followed by an up conversion.	Figure 1, items 7, 8; page 9, lines 17-19.
31. The method of claim 24 further including providing further frequency converting said at least one of said first signals and second signals for application to said satellite receiver.	Figure 1, items 22-24, 35-37; page 11, lines 1-page 12, line 1; page 12, lines 17-19.
32. A satellite broadcasting system comprising:	
a satellite dish;	Figure 1, item 1; page 8, lines 2-4.
a low-noise block converter coupled to the satellite dish;	Figure 1, item 2; page 8, lines 14 et seq.
a head-in processor that receives, from the low-noise block converter, both vertical polarization type satellite signals and horizontal polarization type satellite signals and applies both said vertical polarization type satellite signals and said horizontal polarization type satellite signals simultaneously to the same distribution cable; and	Figure 1, item 44; page 8, line 24 et seq.
a head-out processor adapted for, in use, being coupled to a satellite receiver of the type that alternately receives vertical polarization type satellite signals and horizontal polarization type satellite signals, said head-out processor being coupled to said distribution cable, said head-out processor selecting between said vertical polarization type satellite signals and said horizontal polarization type satellite signals being carried by said distribution cable for application to said satellite receiver.	Figure 1, items 45, 46; page 10, line 19 et seq.; Figure 1, item 39; page 12, line 25-page 13, line 3; original claim 6 (page 15, lines 12-15).

Information Disclosure Statement

Applicants also submit the listings from the in parent application Serial No. 09/001,484 or all references of record in that case. Applicants request the Examiner to consider each of these references in this case. For the Examiner's convenience, applicants are attaching copies of the listed items that are not U.S. patents. Upon request, applicants will also submit additional copies of the listed U.S. patents.

Request for Interview

Applicants await an early action on the merits. If the Examiner finds this case is not now in condition for allowance and believes that an interview prior to first action would be helpful in focussing and/or resolving issues, applicants request the Examiner to contact their representative at the telephone number listed below to arrange a telephonic or personal interview.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: _____

Robert W. Faris
Reg. No. 31,352

RWF:lsp
1100 North Glebe Road, 8th Floor
Arlington, VA 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100

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08/394234

TITLE OF THE INVENTION

Satellite Broadcast Receiving and Distribution System

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates generally to a satellite broadcasting receiving and distribution system and more particularly to a broadcasting receiving and distribution system that will allow for the transmission of vertical and horizontal or left-hand circular and right-hand circular polarization signals to be transmitted simultaneously via a single coaxial cable.

2. Description of the Prior Art

Satellite broadcasting has become very popular throughout the United States. Conventionally, broadcast signals are transmitted through an artificial satellite at very high frequencies. These frequencies are generally amplified and are processed by a particular device after received by an antenna or antennas and prior to application to a conventional home television set or the like.

The device is composed of an outdoor unit generally associated with the antenna and an indoor unit generally associated with the television set or the like and both units are coupled via a coaxial cable.

A problem associated with these types of systems is that they are designed to accept signals through a line of sight. Accordingly, if the satellite is not visual from a

building, then the signal cannot be transmitted. Thus, these systems are rendered useless for high-rises, hospitals, school, and the like. These systems are limited in usage, and as such, can only be utilized in residential homes.

As an example, US Patent No. 5,301,352 issue to Nakagawa et al. disclose a satellite broadcast receiving system. The system of Nakagawa et al. includes a plurality of antennas which, respectively, include a plurality of output terminals. A change-over divider is connected the plurality of antennas and have a plurality of output terminals. A plurality of receivers are attached to the change-over divider for selecting one of the antenna. Though this system does achieve one of its objects by providing for a simplified satellite system, it does, however, suffer a major short coming by not providing a means of receiving satellite broadcasting for individuals who are not in direct line of sight to the antennas. This system is silent to the means of simultaneously transmitting vertical and horizontal polarized signals via a single coaxial cable.

US Patent No. 5,206,954, issue to Inoue et al. disclose yet another satellite system that includes an out-door unit that is connected to a channel selector. In this embodiment, the satellite signal receiving apparatus receives vertically and horizontally polarized radiation signals at the side of a receiving antenna. The signals are

then transmitted, selectively to provide for either one of the vertically or horizontally polarized signals to be transmitted. This design and configuration provides for one coaxial cable to be utilized, but does not provide for the vertical and horizontal signals to be transmitted simultaneously, but rather, selectively.

None of these previous efforts, however, provide the benefits intended with the present invention. Additionally, prior techniques do not suggest the present inventive combination of component elements as disclosed and claimed herein. The present invention achieves its intended purposes, objectives and advantages over the prior art device through a new, useful and unobvious combination of component elements, which is simple to use, with the utilization of a minimum number of functioning parts, at a reasonable cost to manufacture, assemble, test and by employing only readily available material.

SUMMARY OF THE INVENTION

The present invention provides a satellite broadcast receiving and distribution system that will permit for the transmission of vertical and horizontal or left-hand circular and right-hand circular polarization signals simultaneously via a single coaxial cable. The system of the present invention will accommodate two different polarity commands from two or more different sources at the same time. This satellite broadcast receiving and distribution system of the present invention will provide for the signals received from the satellite to be converted to frequencies which the present day amplifiers can transport. This will permit for the signals to travel via existing wiring in buildings, high-rises, hospitals, and the like so that satellite broadcasting can be viewed by numerous individuals by way of a single satellite antenna.

The satellite broadcast system consists of a satellite antenna which receives the polarized signals. These polarized signals are transmitted to a head-in processor and are converted to different frequencies and polarities in order to render the different signals to be transmitted simultaneously. Hence, the head-in processor will permit for the transmission of signals of two different frequencies and polarities to be transmitted simultaneously and will also accommodate two different polarity commands from two or more different sources at the same time via a single cable. This cable is coupled to a head-out processor. These

signals, once in the head-out processor, will be converted to frequencies and polarities that are required for the source (i.e. television). Once converted, the signals are transmitted to a satellite receiver. This satellite receiver is coupled to the source.

Accordingly, it is the object of the present invention to provide for a satellite broadcast receiving and distribution system that will convert different frequencies and different polarized signals in order to permit the signals to be transmitted via a single coaxial cable.

It is another object of the present invention to provide for a satellite broadcast receiving and distribution system that will provide service to mid/high-rise office buildings, condominiums, schools, hospitals and the like via a single satellite.

A final object of the present invention, to be specifically enumerated herein, is to provide a satellite broadcast receiving and distribution system in accordance with the proceeding objects and which will conform to conventional forms of manufacture, be of simple construction and easy to use so as to provide a system that would be economically feasible, long lasting and relatively trouble free in operation.

Although there have been many inventions related to satellite broadcast receiving and distribution systems, none of the inventions have become sufficiently compact, low cost, reliable enough to become commonly used, and all still

require the use of two cables in order to transmit the full band width signals of the different polarized frequencies simultaneously. The present invention meets the requirements of the simplified design, compact size, low initial cost, low operating cost, ease of installation and maintainability, and minimal amount of training to successfully employ the invention.

The foregoing has outlined some of the more pertinent objects of the invention. These objects should be construed to be merely illustrative of some of the more prominent features and application of the intended invention. Many other beneficial results can be obtained by applying the disclosed invention in a different manner or modifying the invention within the scope of the disclosure. Accordingly, a fuller understanding of the invention may be had by referring to the detailed description of the preferred embodiments in addition to the scope of the invention defined by the claims taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 illustrates a block diagram representing the satellite broadcast signal receiving and distribution system according to the present invention.

Similar reference numerals refer to similar parts throughout the several views of the drawings.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

As illustrated in fig. 1, the satellite system of the present invention includes a receiving satellite that is connected to a head-in equipment frequency processor **44**. It is at this head-in equipment frequency processor where the signals (Vertical-polarized signals and Horizontal-polarized signals or left-hand circular and right-hand circular polarization signals) are received simultaneously and then transmitted via a single coaxial cable **13** to the head-out receiver processor **45** or **46**. From the receiver processor, the signals are transported to a satellite receiver **27** or **41** and to a source **29** or **43** (this figure illustrates a television as its source).

As illustrated, the receiving satellite **1** is connected to a low-noise block converter (LNB) **2** for amplifying the respective polarized signals (Vertical-polarized signals and Horizontal-polarized signals or left-hand circular and right-hand circular polarization signals). This LNB is coupled to the head-in equipment frequency processor **44**. Accordingly, after signals are received, they pass the low-noise block converter **2**, to provide for the signals to enter the head-in equipment frequency processor **44** (illustrated in dashed lines) via conduits **3** and **4**.

The head-in equipment frequency processor **44** provides for the signals via lines **3** and **4** to be converted to the frequencies which the present day amplifiers can tranport via converters **5** and **7**, respectively. From the conduits **3**

and **4**, the signals or transponders are transmitted to a first converter or down converter **5** and a second converter or up converter **7**, respectfully. These frequency converters convert the entered frequencies to frequencies which the present day amplifiers can transport.

The utilization of two converters permit for the acceptance of two signals or polarized transponders that are of a different frequency.

In the down converter **5**, the transponders are converted down to a specified frequency. This specified frequency is the frequency that is required for the present day amplifiers to transport. The newly converted frequencies are amplified through the amplifying means **6**. At means **6**, the converted frequencies are amplified so not to create second harmonics. These signals are then transferred to a four way splitter **10**.

In the up converter **7**, the transponders are converted up to a specified frequency. The converted frequencies then are converted down via down converter **8**. This process of converting up and then down provides for frequencies to be converted without difficulties and avoiding the forbidden conversion area.

The converted signals are transferred to the four way splitter **10** in order to combine the frequency of the amplifier signal of **6** and frequency from converter **8**. To synchronized the system, the frequencies from the phase lock loop (PLL) transmitter **9** are transmitted to the splitter **10**.

From **10**, the signals are passed through an A.C. power separator **11** which routes 60 Volts power to a D.C. power supply of 18 Volts.

This will permit for the dual frequencies from the satellite dish to be transmitted simultaneously via a single coaxial cable **13**. Dependent upon the length of the cable, an optional amplifier **14** can be coupled thereto. Power from a power source **16** is inserted into the lines via a power inserter **15**. The signals are amplified, as needed, with an additional amplifier **17**. It is noted that the amplifiers are optional and are dependent to the distance that the head-in frequency processor **44** is located from the head-out receiver processor **45** or **46**. The power supply and power source **16** energize the head-in frequency processor **44**.

From the single coaxial cable **13**, the signals are adjusted via a tap **18** or **31** to permit for the appropriate decibels that is required for the head-out receiver processor **45** or **46**.

The head-out frequency processor includes a plurality of embodiments. The design and configuration of the head-out frequency processor is dependent on the source in combination with the satellite receiver.

The first embodiment for the head-out receiver processor is illustrated in figure 1 and is represented by way of dashed lines **45**. As seen in this head-out receiver processor, the simultaneously transmitted signals enter the processor via conduit **19**. The conduit is coupled to a four

(4) way splitter **20**. A phase lock loop (PLL) receiver **21** is coupled to the splitter **20** to permit for the signals to be locked to the proper and desired frequencies. From the splitter, the first frequency is transmitted to a first converter **22** in order to permit signals or transponders to be converted up to a specified frequency. This up converted signal is then transmitted to the satellite receiver **27** by way of a conduit **26**.

The second frequencies are transmitted to a first or up converter **23** and then is transmitted to a second or down converter **24**. This will permit for the signals to be converted to the desired frequency. The conversion of the signals from up to down provides the benefit of converting the frequencies without any mishap or error. This method of conversion will avoid the forbidden conversion area. This second or down converter **24** is coupled to the satellite receiver **27** via conduit **25**. The signals received from the satellite **1** can then be transmitted to the source **29** by line **28**.

As illustrated, this head-out receiver processor **45** is the reverse process of the head-in processor **44**. This is to provide for the signals to reconvert to its original frequencies so as to provide for the satellite receiver and source to accept the signals. The single cable **13** accepts the signals at frequencies different than that of the source **29**. Accordingly the head-out receiver processor **45** must reconvert the signals to the frequencies that are utilized

by the source. This design and configuration of the head-out receiver processor is dependent on the design and configuration of the satellite.

An alteration of the satellite receiver requires an alteration in the head-out receiver processor. This alteration is illustrated in figure **1** and is shown in outline and designated as reference **46**. In this design and configuration, the satellite receiver utilizes only one wire **40** and accepts only one type of signals, at a time, such as left-hand circular or right-hand circular polarized signals.

As seen, the frequencies are tapped via **31**. The tap **31** is coupled to the head-out receiver processor **46** via line **32** which is connected to a four (4) way splitter **33**. To provide for the signals to be locked in proper frequencies, the four way splitter **33** is coupled to a phase lock loop (PLL) receiver **34**.

From the splitter **33**, the first signal is transmitted to a first or up converter **36** and then is transmitted to a second or down converter **37**. The conversion of the signals from up to down provides the benefit of converting the frequencies without any mishap or error. This method of conversion will avoid the forbidden conversion area.

The signals, from the splitter **33** are transmitted to an up converter **35** which will inherently convert the signals.

A polarity switch **39** is connected to converters **35**, **36**, **37** in order to permit for the head-out receiver processor to be coupled to the satellite receiver **41** via a single cable

40 and a joining means 38 which is a four (4) way splitter. The satellite receiver 41 is connected by way of line 42 to a source 43.

It is noted that figure 1 illustrates the use of two head-out receiver processors, but in actuality, only one head-out receiver processor is utilized with the head-in processor 44. The type and embodiment for the head-out receiver processor is dependent to the combination of the satellite receiver and source that are utilized.

The satellite system of the present invention will permit for two signals of different frequency and polarities to travel simultaneously via a single coaxial cable. The use of this will provide for a satellite system that is versatile, economical, and compact. The usage of the single cable permits for a system that can accept satellite broadcasting in places that were previously rendered impossible. These places includes mid/high-rise office buildings, condominiums, hospitals, schools, etc. The unique design and configuration enables the signals to be transmitted via the existing wiring of the buildings. The only renovations that may need to be done is the upgrading of the existing amplifiers.

While the invention has been particularly shown and described with reference to an embodiment thereof, it will be understood by those skilled in the art that various changes in form and detail may be made without departing from the spirit and scope of the invention.

I claim:

1. A satellite broadcasting system comprising:

a satellite dish coupled to a low-noise block converter; and

said low-noise block converter is coupled to a first means of converting vertical polarization signals and horizontal polarization signals or left-hand circular polarization signals and right-hand circular polarization signals from a satellite and transmitting simultaneously via a single coaxial cable for enabling two different frequencies and polarities to be transmitted simultaneously via said single coaxial cable.

2. A satellite broadcasting system as in claim 1 further comprising a second means ~~is~~ coupled to said first means;

said second means converts said vertical polarization signals and said horizontal polarization signals or said left-hand circular polarization signals and said right-hand circular polarization signals from said first means to frequencies for a source;

a satellite receiver is coupled to said second means; and

said source is coupled to said satellite receiver.

3. A satellite broadcasting system as in claim 2 wherein a power source is coupled to said first means and said power source powers said first means.

4. A satellite broadcasting system as in claim 2 wherein said second means provides for said signals to be converted separately and independently to said satellite receiver by a transmitting means.

5. A satellite broadcasting system as in claim 2 wherein said second means provides for a transmitting means for said signals to be selectively converted to said satellite receiver via a first cable coupled to said second means.

6. A satellite broadcasting system as in claim 5 wherein said transmitting means further includes a polarity switch for permitting said signals to be selectively converted to said satellite receiver.

7. A satellite broadcasting system as in claim 2 wherein said first means includes a first converting system for converting said signals of a first direction to a desired first frequency and polarization and a second converting system for converting said signals of a second direction to a desired second frequency and polarization.

8. A satellite broadcasting system as in claim 7 wherein said first converting system includes a first down converter which is coupled to an amplifier and said second converting system includes an up converted coupled to a second down converter and a joining means is coupled to said amplifier and said second down converter.

9. A satellite broadcasting system as in claim 8 wherein said joining means includes a four way splitter.

10. A satellite broadcasting system as in claim 9 wherein a phase lock loop transmitter is coupled to said four way splitter.

11. A satellite broadcasting system as in claim 4 wherein said second means includes a splitting means to split and divide said signals from said single coaxial cable to enable said signals to be transmitted to a first converting system for converting said signals of a first direction to a desired first frequency and polarization for said satellite receiver and a second converting system for converting said signals of a second direction to a desired second frequency and polarization for said satellite receiver, and said first converting system and said second converting system provide for said transmitting means.

12. A satellite broadcasting system as in claim 11 wherein said first converting system includes a first up converter which is coupled to said splitting means and said first down converter is coupled to a first down converter, said first down converter is coupled to said satellite receiver via a first conduit, said second converting system includes a second up converter coupled to said splitting means, and said second up converter is coupled to said satellite receiver via a second conduit.

13. A satellite broadcasting system as in claim 12 wherein said splitting means includes a four way splitter.

14. A satellite broadcasting system as in claim 13 wherein a phase lock loop receiver is coupled to said four way splitter.

15. A satellite broadcasting system as in claim 6 wherein said second means includes a splitting means to split and divide said signals from said single coaxial cable to enable said signal to be transmitted to a first converting system for converting said signals of a first direction to a desired first frequency and polarization for said satellite receiver and a second converting system for converting said signals of a second direction to a desired second frequency and polarization for said satellite receiver, and said first

converting system and said second converting system provide for said transmitting means.

16. A satellite broadcasting system as in claim 15 wherein said first converting system includes a first up converter which is coupled to said splitting means and said first up converter is coupled to a first down converter, said first down converter is coupled to a joining means, said second converting system includes a second up converter coupled to said splitting means, and said second up converter is coupled to said joining means, said polarity switch is coupled to said first down converter and said second up converter, and said polarity switch is coupled to said first cable which is coupled to said satellite receiver.

17. A satellite broadcasting system as in claim 16 wherein said splitting means and said joining means each include a four way splitter, and a phase lock loop receiver is coupled said splitting means.

18. A satellite broadcasting system as in claim 8 wherein said second means includes a splitting means to split and divide said signals from said single coaxial to enable said signal to be transmitted to a third converting system for converting said signals of said first direction and a fourth converting system for converting said signals of said second direction.

19. A satellite broadcasting system as in claim 18 wherein said third converting system includes a second up converter which is coupled to said splitting means and said second up converter is coupled to a third down converter, said third down converter is coupled to said satellite receiver via a first conduit, said fourth converting system includes a third up converter coupled to said splitting means, and said third up converter is coupled to said satellite receiver via a second conduit.

20. A satellite broadcasting system as in claim 8 wherein said second means includes a splitting means to split and divide said signals from said single coaxial to enable said signals to be transmitted to a third converting system for converting said signals of said first direction to a desired first frequency and polarization for said satellite receiver and a fourth converting system for converting said signals of said second direction to a desired second frequency and polarization for said satellite receiver.

21. A satellite broadcasting system as in claim 20 wherein said third converting system includes a second up converter which is coupled to said splitting means and said second up converter is coupled to a third down converter, said third down converter is coupled to a second joining means, said fourth converting system includes a third up converter

coupled to said splitting means, and said third up converter is coupled to said second joining means, a polarity switch is coupled to said third down converter and said third up converter, and said polarity switch is further coupled to a conduit which is coupled to said satellite receiver, and said second joining means is coupled to said conduit.

ABSTRACT

The present invention provides for a satellite system that will permit for the transmission of signals of two different frequencies and polarities to be transmitted simultaneously, also the system will accommodate two different polarity commands from two or more different sources at the same time. The satellite system of the present invention includes a satellite dish or antenna that receive signals. These received signals are then transmitted to a converter. A head-in frequency processor is coupled to the converter. This head-in frequency processor enables the different frequencies and polarities to be transmitted simultaneously via a single coaxial cable. This single coaxial cable is coupled to a head-out receiver processor which is connected to a receiver. This receiver is connected to a source. This unique design and configuration provides for the system that will permit for satellite broadcasting to occur in locations that are not in the line-of-sight path to the satellites. Accordingly, the satellite system of the present invention will permit satellite broadcasting in high-rises, hospitals, condominiums, schools, and the like.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

GREEN et al.

Serial No. to be assigned — Atty Ref.: 850-15

Filed: Concurrently Herewith — Group: 2745

For: SATELLITE BROADCAST RECEIVING AND DISTRIBUTION SYSTEM — Examiner: Vo, N.

* * * * * * * * * * *

July 21, 2000

Assistant Commissioner for Patents
Washington, DC 20231

SUBMISSION OF FORMAL DRAWINGS

Sir:

Enclosed herewith is one sheet of formal, inked drawings for the above-identified application.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: _____

Robert W. Faris
Reg. No. 31,352

RWF:ejs
1100 North Glebe Road, 8th Floor
Arlington, VA 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100

442539

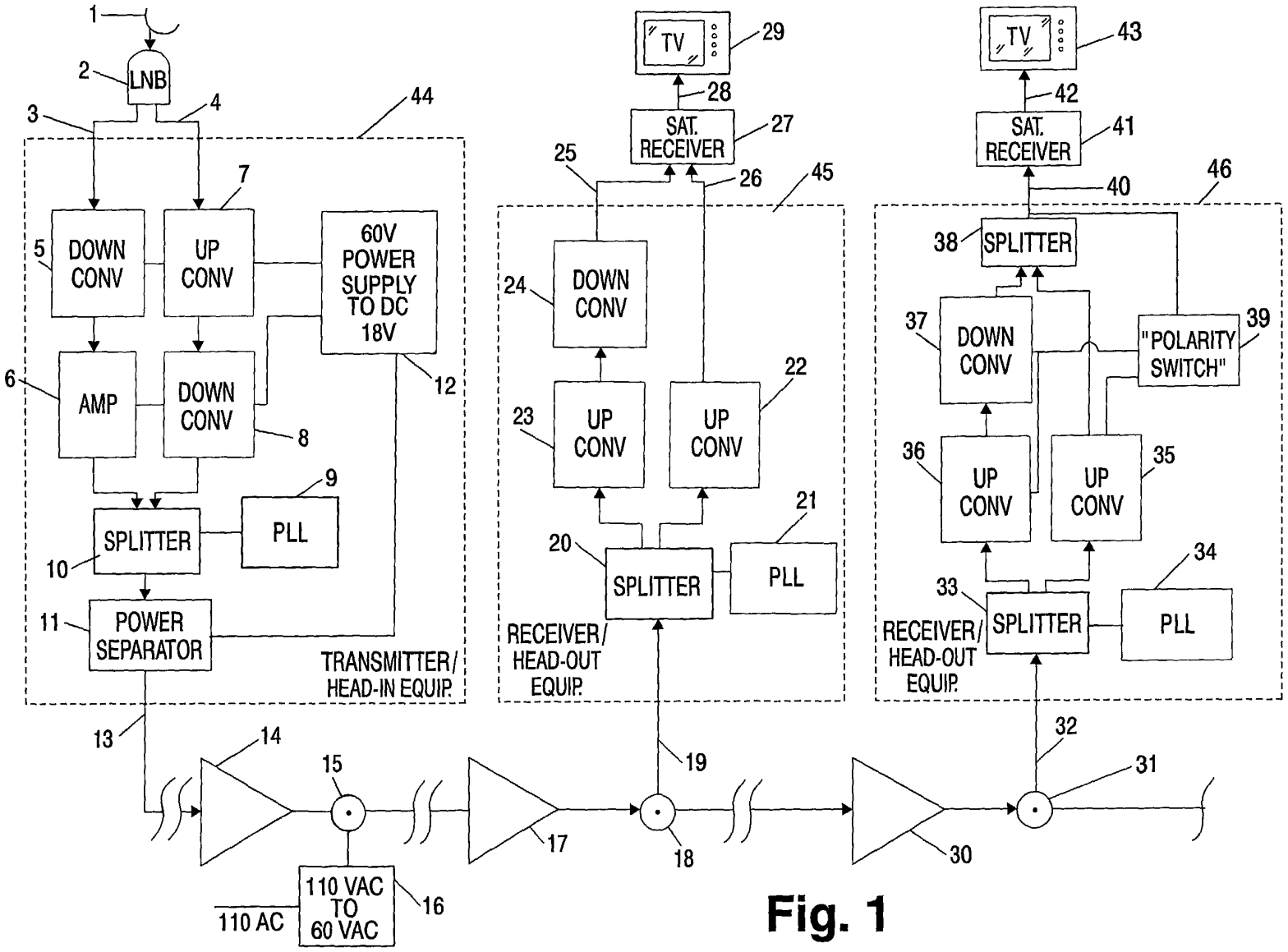
1
2
LNB
3
4
44
5
DOWN CONV
7
UP CONV
60V POWER SUPPLY TO DC 18V
12
6
AMP
DOWN CONV
8
9
PLL
SPLITTER
10
11
POWER SEPARATOR
TRANSMITTER/ HEAD-IN EQUIP.
13
14
15
16
110 VAC TO 60 VAC
110 AC
17
18
19
TV
29
28
SAT. RECEIVER
27
25
26
45
24
DOWN CONV
22
23
UP CONV
UP CONV
21
20
SPLITTER
PLL
RECEIVER/ HEAD-OUT EQUIP.
TV
43
42
SAT. RECEIVER
41
40
46
38
SPLITTER
37
DOWN CONV
"POLARITY SWITCH"
39
36
UP CONV
UP CONV
35
34
33
SPLITTER
PLL
RECEIVER/ HEAD-OUT EQUIP.
32
31
30

Fig. 1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

GREEN et al. Atty. Ref.: 850-15

Serial No. to be assigned Group: 2745

Filed: concurrently herewith Examiner: Vo, N.

For: SATELLITE BROADCAST RECEIVING AND DISTRIBUTION SYSTEM

* * * * * * * * * * * *

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

DECLARATION OF JAMES A. GREEN, SR.

I, the inventor in the above-identified application, do hereby declare:

1. I was born on November 2, 1922;

2. I am 77 years old.

3. I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 7-21-2000

James A. Green, Sr.

PATENT

Attorney's Docket No. 4270

COMBINED DECLARATION AND POWER OF ATTORNEY

(ORIGINAL, DESIGN, NATIONAL STAGE OF PCT, SUPPLEMENTAL, DIVISIONAL, CONTINUATION OR CIP)

As a below named inventor, I hereby declare that:

TYPE OF DECLARATION

This declaration is of the following type: (*check one applicable item below*)

- [X] original
- [ ] design
- [ ] supplemental

NOTE: If the declaration is for an International Application being filed as a divisional, continuation or continuation-in-part application do not check next item; check appropnate one of last three items.

- [ ] national stage of PCT

NOTE: If one of the following 3 items apply then complete and also attach ADDED PAGES FOR DIVISIONAL, CONTINUATION OR CIP.

- [ ] divisional
- [ ] continuation
- [ ] continuation-in-part (CIP)

INVENTORSHIP IDENTIFICATION

WARNING: *If the inventors are each not the inventors of all the claims an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted.*

My residence, post office address and citizenship are as stated below next to my name, I believe I am the original, first and sole inventor (*if only one name is listed below*) or an original, first and joint inventor (*if plural names are listed below*) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

TITLE OF INVENTION

Satellite Broadcast Receiving and Distribution System

SPECIFICATION IDENTIFICATION

the specification of which: *(complete (a), (b) or (c))*

(a) [X] is attached hereto.

(b) [ ] was filed on _____ as [ ] Serial No. 0 / _____
or [ ] Express Mail No., *as Serial No. not yet known* _____
and was amended on _____ (*if applicable*).

NOTE: Amendments filed after the original papers are deposited with the PTO which contain new matter are not accorded a filing date by being referred to in the declaration. Accordingly, the amendments involved are those filed with the application papers or, in the case of a supplemental declaration, are those amendments claiming matter not encompassed in the original statement of invention or claims. See 37 CFR 1.67.

(c) ☐ was described and claimed in PCT International Application No. _____ filed on _____ and as amended under PCT Article 19 on _____ (*if any*).

ACKNOWLEDGEMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).

☒ In compliance with this duty there is attached an information disclosure statement. 37 CFR 1.97.

PRIORITY CLAIM

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

(complete (d) or (e))

(d) ☒ no such applications have been filed.

(e) ☐ such applications have been filed as follows.

NOTE: Where item (c) is entered above and the International Application which designated the U.S. claimed priority check item (e), enter the details below and make the priority claim.

EARLIEST FOREIGN APPLICATION(S), IF ANY FILED WITHIN 12 MONTHS (6 MONTHS FOR DESIGN) PRIOR TO THIS U.S. APPLICATION

COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, **month**, year)	PRIORITY CLAIMED UNDER 37 USC 119
			☐ YES NO ☐
			☐ YES NO ☐
			☐ YES NO ☐
			☐ YES NO ☐
			☐ YES NO ☐

ALL FOREIGN APPLICATION(S), IF ANY FILED MORE THAN 12 MONTHS (6 MONTHS FOR DESIGN) PRIOR TO THIS U.S. APPLICATION

POWER OF ATTORNEY

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (*List name and registration number*)

(3)

Lawrence L. Carnes P39,128
Trinidad K. Dixon 38,433
Franklin J. Cona 33,855

(check the following item, if applicable)

☐ Attached as part of this declaration and power of attorney is the authorization of the above-named attorney(s) to accept and follow instructions from my representative(s).

SEND CORRESPONDENCE TO

Carnes, Cona & Dixon
315 South Calhoun St.
Suite 716
Tallahassee, FL 32301

DIRECT TELEPHONE CALLS TO:
(*Name and telephone number*)

Trinidad K. Dixon
(904) 681-0875

DECLARATION

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

SIGNATURE(S)

1-00

Full name of **sole or first inventor** James A. Green Sr
Inventor's signature James A. Green Sr.
Date FEB 22, 1995 Country of Citizenship USA
Residence Tallahassee, Florida, USA FL
Post Office Address RTE. 4, Box 402
Tallahassee, FL 32304

2-00

Full name of **second joint inventor**, if any Austin S. Coker, Jr.
Inventor's signature Austin S. Coker, Jr.
Date FEB. 22, 1995 Country of Citizenship USA
Residence Tallahassee, Florida, USA FL
Post Office Address P.O. Box 10257
Tallahassee, FL 32302

CHECK PROPER BOX(ES) FOR ANY OF THE FOLLOWING ADDED PAGE(S) WHICH FORM A PART OF THIS DECLARATION

☐ Signature for third and subsequent joint inventors. *Number of pages added* _____

☐ Signature by administrator(trix), executor(trix) or legal representative for deceased or incapacitated inventor. *Number of pages added* _____

☐ Signature for inventor who refuses to sign or cannot be reached by person authorized under 37 CFR 1.47. *Number of pages added* _____.

* * *

☐ Added pages to combined declaration and power of attorney for divisional, continuation, or continuation-in-part (CIP) application.

☐ Number of pages added _____

* * *

☐ Authorization of attorney(s) to accept and follow instructions from representative

* * *

If no further pages form a part of this Declaration then end this Declaration with this page and check the following item

☒ **This declaration ends with this page.**